

**APPLICATION # CL1- 00521-1**

**STAFF ANALYSIS**

**FEASIBILITY:**

Project Scope: The project will convert two existing outdated laboratory spaces to provide a multipurpose hESC shared laboratory with four work stations and a support laboratory with two additional work stations. Adjacent spaces will also receive hESC equipment but will not be renovated. The description of the work is good and explains in appropriate detail the major components of the work consisting of mechanical, electrical, plumbing systems along with reconfiguration of walls to form work-station alcoves. The plans provided in support of the project are schematic in nature but reflect a thorough design analysis for providing efficient layout of equipment and creation of the alcoves. The design uses “mobile” lab benches with minimal amount of fixed casework which will provide future flexibility should the space need to be reconfigured.

The proposal indicates that the improvements involve 1,440 gross square feet encompassing 1,394 assignable square feet (asf). The difference between gross and assignable would be the thickness of the walls since there is no circulation or non-assignable space involved in the project. A rough take-off from the drawings confirmed the square footages provided.

Project Management: The proposal identifies a well-defined institutional construction management process. The described oversight and design consultative process should ensure adequate institutional management support.

**COST:**

A cost plan summary is provided identifying 16 primary categories of costs to substantiate the construction contract amount of \$823,000. Plumbing, HVAC and electrical work constitute more than 64 percent of the cost of the project. This percentage is consistent with typical laboratory-type work. Interior partitions, doors, finishes, including walls and ceilings, and other miscellaneous work make up 25 percent of the cost, with fixed equipment representing the remaining 11 percent. There is an additional cost allowance of \$87,000 for institutional based work that involves demolition, asbestos abatement work, and movable equipment installation mainly relating to the mobile benches. The design fees, administrative costs and project contingency total \$290,000 and represent 32 percent of the construction amount. The proposed amount exceeds the 25 percent guideline due to design fees being 14 percent and administrative costs being 11 percent of budgeted contract costs. These costs exceed the RFA guideline by \$62,500 which will be addressed in the analysis of institutional commitment.

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The overall cost per asf for the renovation work is \$861. To convert this to a comparable figure for gross square feet (gsf) in a typical research-intensive building, one would assume an overall building efficiency of assignable-to-gross area of 60 percent. Thus, the 1,394 asf would equate to 2,323 gsf if one considers the full complement of building space (e.g., the gross building area including circulation and support) constructed to support the area to be renovated. Using this calculated gross area, the cost per gsf would amount to \$516/gsf. This provides a more meaningful comparison to new laboratory building construction costs. We conclude that the average cost for new laboratory construction would be about \$600/gsf, excluding land and site utilities. This amount would vary widely within California, but is being used here as an indicator of new construction value for comparative purposes. Based on this comparison, we conclude that the renovation work represents about 86 percent of the cost of new laboratory space. Our analysis indicates that costs should not exceed about 65 percent of new construction in order to be considered a reasonably good investment to provide new hESC laboratory space. Moreover, we note that the mobile laboratory benches are to be procured as movable equipment at a cost of \$148,000. Benchwork is normally a fixed equipment item included within the construction portion of the budget. If the cost of these benches were considered as part of the construction budget, the cost per square foot for the laboratory renovations plus benches would be \$580/gsf.

We conclude that the proposed renovations are very expensive and would approach the cost of new construction. This appears to be a function of (1) the poor condition of the current space requiring extensive systems upgrades, and (2) the nature of the design requiring extensive new work in reconfiguring the laboratory space to reflect the alcove design as opposed to the typical linear bench design found in similar laboratories.

The applicant indicates that the shared laboratory would be able to accommodate the NIH-free laboratory space needs for about 21 Principal Investigators (PIs) in the area. If one considers only the institutional-based PIs (e.g. 21 PIs) the cost per PI would be about \$57,000. Based on CIRM funding only (construction and equipment) the cost per institutional-based PI is \$66,804. These costs are relatively high in comparison to typical shared laboratory proposals. One mitigating factor to this high cost is that the institution is located in a relatively remote area of the state where there has historically been a lack of competition in major construction. The available data from cost management consulting firms suggests that this higher cost premium due to geographic considerations would be about 10 percent, plus or minus depending on market conditions at the time of bidding.

The applicant also indicates that costs estimates will be monitored on an ongoing basis and the design will be modified if needed to stay within the approved budget.

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**TIMELINE:**

The project schedule indicates that, assuming an August 2007 grant award, preliminary plans and working drawings will be completed in March 2008, with a contract award in July 2008, 11 months after the award. The plan is to complete construction seven months later in March 2009, indicating a total design and construction timeline of 18 months for the project. The timeline is somewhat extended in comparison to typical laboratory renovations due to the extensive demolition, asbestos abatement, and laboratory reconfiguration.

**INSTITUTIONAL COMMITMENT:**

The applicant indicates that matching funds will be provided from the following sources:

- \$55,000 in prior expenditures for design work on the shared laboratory renovation.
- \$238,940 in institutional funds to satisfy the remaining renovation match (\$145,000) and equipment match (\$93,938).

As noted in the cost analysis, the proposed budget for design, administration and contingency exceeds the guideline established in the budget by \$62,500. Therefore, if this proposal is approved, an additional \$62,500 in institutional funding would be needed to cover the unallowable costs included in the proposed budget. Moreover, the analysis of the overall cost of the project indicates that the renovation costs will approach the value of new laboratory space and thus may not be a good investment for CIRM. In order to mitigate this, CIRM may want to condition its approval of this application on additional funding from the institution. If project costs were held to 65 percent of the new construction guideline, the total “allowable” cost would be about \$905,000, with CIRM funding being \$754,000. Based on the current scope of work and a reduced CIRM grant amount, the institution would need to commit an additional \$246,000 to maintain the current scope of work and offset the reduction. To partially mitigate this added institutional cost, CIRM could consider costs in this geographic area to be 10 percent higher than in other more populous areas of the state. Under that scenario the allowable cost could rise to \$1,000,000 with CIRM funding of \$833,000, and additional institutional funding of \$167,000. Either of these amounts would be in addition to the \$62,500 needed to cover the excess amount budgeted for design and administrative costs.

**HISTORICAL PERFORMANCE:**

Data for three projects undertaken between 2004 and 2006 and ranging in cost from \$1.3 million to \$4.4 million indicate that actual project budgets were very close to the original budgets, and actual scheduled completion dates were one or two months later than the

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original scheduled completion. The number of change orders noted is reasonable and would indicate successful project management and execution for these prior projects.

The applicant indicates that there has been only one renovation project undertaken in the last two years. This would indicate that while experience seems good, there may not be enough activity at the institution to make an informed judgment about current capacity or delivery of capital projects.

### **RESPONSIVENESS:**

Shared Laboratory: The applicant indicates that there are 25 potential researchers planning to undertake hESC research activities once additional shared laboratory space is available. We would note that there are very few some non-institutional based researchers due to the fact there are not many hESC researchers located in the region. Therefore, the utilization of this shared laboratory will be heavily dependent on the institution expanding its own hESC programs as proposed in the application. Therefore we would judge the proposal to be responsive to the RFA for shared laboratory use.

Techniques Course: There is no techniques course proposed by the applicant.

### **Facilities Working Group Issues**

The grant management office will need to confirm that all conditions of the grant as indicated in the Grants Administration Policy have been met. This would include confirming that all past work is consistent with grant requirements for prevailing wage and other construction-related requirements. This includes confirmation that equipment funds are budgeted pursuant the Grants Administration Policy as adopted December 7, 2006.